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EXAMINER	
SINGH, DALZID E	
ART UNIT	**PAPER NUMBER**
2633	4

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/839,023	RAJ ET AL.	
	Examiner	Art Unit	
	Dalzid Singh	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2 and 3*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 19 is objected to because of the following informalities: Claim 19 depends on itself. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5 and 9-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakata (US Patent No. 5,500,857).

Regarding claims 1 and 11, Nakata discloses optical communication system, as shown in Fig. 7, comprising:

an optical transceiver including a wavelength division multiplexer to enable optical communication with the other two transceivers (as shown in Fig. 7, Nakata shows multiple nodes (21-26), wherein each node comprises of optical transceiver, see col. 5, lines 32-35).

Nakata differs from these claims in that Nakata does not specifically disclose a processor coupled to each optical transceiver. However, it is extremely well known that optical transceiver comprises processor to process the signal. Therefore, if it is not inherent, it would have been obvious to couple processor to the optical transceiver

of Nakata. One of ordinary skill would have been motivated to do such in order to efficiently control operation of the optical transceiver in transmitting and receiving of information signal.

Furthermore, since the optical transceiver within a node is connected to other optical transceiver at other nodes (for example, in Fig. 7, Nakata shows that the nodes are interconnected in a ring configuration), therefore processor of optical transceiver at one node location is coupled to other processor of optical transceiver located at other node locations.

Regarding claim 2, in col. 5, lines 30-32, Nakata teach the that the optical transmitter includes a laser.

Regarding claim 3, in col. 5, lines 22-25, Nakata teaches the use of wavelength filter tunable to a particular input wavelength, which is located at the node.

Regarding claims 4 and 12, in col. 5, lines 42-45, Nakata teaches that each processor (processor within the node, see claim 1) is assigned a wavelength (for example, λ_1) for communicating with the other processors located at other node.

Regarding claim 5, in Fig. 7, Nakata shows coupler (8 or 9) to couple the optical signal which reflect the optical signal to and from node 25.

Regarding claim 9, in col. 5, lines 55-60, Nakata teaches that each optical transceiver within a node transmits a light beam together with a code identifying a sending and a receiving processor (the code is in a form of an address within the packet of the signal to indicate self address and destination address).

Regarding claim 10, in col. 17, lines 27-52, Nakata teaches that when one processor is receiving a wavelength division multiplexed signal from another processor, the one processor broadcasts to all other processors that the one processor is busy (since a busy signal is indicated by inserting a 1 into a frame pulse, which is transmitted and circulated around the transmission line, therefore busy signal is being broadcast form one optical transceiver containing processor to other optical transceiver containing processor).

Regarding claims 13 and 22, in col. 5, lines 51-67 to col. 6, lines 1-12, Nakata teaches step including scanning for the wavelengths of any of said other processors (the optical frame pulse is received detect or scan for available wavelength).

Regarding claims 14 and 23, in col. 5, lines 51-67, Nakata teaches that the node transmitting a light beam having a predetermined wavelength, and transmitting a code that identifies the transmitting processor and the intended receiving processor (the code is the packet signal including the self and destination address which is converted to a particular wavelength, for example λ_a, and transmitted on the transmission line).

Regarding claims 15 and 24, in col. 6, lines 5-12, Nakata teaches that the receiving processor identifies the wavelength of the incoming beam and the code accompanying said beam, and locks to the wavelength of the transmitting processor (the node checks for available wavelength by identifying the wavelength of the incoming beam, which is included in the management table, if there is an available wavelength, then select or lock that wavelength for communication).

Regarding claims 16, 17, 25 and 27, in col. 17, lines 27-52, Nakata teaches notifying a first processor (node) when a second processor (node) is receiving a beam from a third processor (a busy signal inserted into a frame pulse is transmitted as a token to go around the transmission line; since the frame pulse goes around the transmission lines, therefore other nodes or processor is notified through the management table that a particular wavelength is being used).

Regarding claims 18 and 26, in col. 18, lines 33-38, Nakata teaches indicating when said second processor is no longer communicating with said third processor (processor within the nodes informs other nodes when communication is finished or completed).

Regarding claim 19 (as far as understood), in col. 5, lines 53-67, Nakata teaches using a code (for example, packet containing self and destination address) transmitted by the third processor (node) to determine if a given processor (node) is the intended recipient of a beam transmitted from the third processor (the recipient processor receive the address and determine whether the transmitted signal is intended for it).

Regarding claim 20, as discussed above, since the communication signal is transmitted in optical form (for example, wavelengths are transmitted from one node to the other nodes), therefore the processors (node) are optically interconnected.

Regarding claim 21, Nakata discloses optical communication system, as shown in Fig. 7, comprising:

identify a light communication from a node intended for said first node (in col. 5, lines 51-67 to col. 6, lines 1-28, Nakata teaches that wavelength between the nodes are assigned to be different wavelengths);

tune to said wavelength (each of the nodes are tuned to the assigned wavelength, see col. 5, lines 43-50); and

notify a third node that the first node is tuned to said wavelength (in col. 6, lines 1-28, Nakata teaches transmission of line management table to indicate wavelength being used or assigned to a particular node; the line management table is transmitted as a token around the transmission line to be accessible to all the nodes in the network, therefore other nodes is notified that a particular wavelength is being used).

Nakata differs from this claim in that Nakata does not specifically disclose a processor coupled to each optical transceiver. However, it is extremely well known that optical transceiver comprises processor to process the signal. Therefore, if it is not inherent, it would have been obvious to couple processor to the optical transceiver of Nakata. One of ordinary skill would have been motivated to do such in order to efficiently control operation of the optical transceiver in transmitting and receiving of information signal.

Furthermore, since the optical transceiver within a node is connected to other optical transceiver at other nodes (for example, in Fig. 7, Nakata shows that the nodes are interconnected in a ring configuration), therefore processor of optical transceiver at one node location is coupled to other processor of optical transceiver located at other node locations.

Regarding claim 28, in col. 5, lines 4-21 and 40-42, Nakata teaches the use optical communications and wavelength division multiplexing.

Regarding claim 29, in col. 5, lines 43-50, Nakata teaches that the first processor-based system (node) to communicate with other processor-based systems (node) using an assigned wavelength (for example, λ_1 is used for communication between node 22 to node 25).

Regarding claim 30, in col. 5, lines 51-57, Nakata teaches that the first processor-based system (node) to transmit a code (a code or packet containing self and destination address) that identifies said first processor-based system (node) and an intended receiving processor-based system (node).

4. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakata (US Patent No. 5,500,857) in view of Huber et al (US Patent No. 6,687,428).

Regarding claim 6, Nakata disclose optical communication system comprising of coupler as discussed above and differ from this claim in that Nakata does not specifically disclose that the coupler is elliptical coupler. However, it is well known that there are various designs of optical coupler. Huber et al is cited to show the well known concept of using elliptical coupler. Therefore, it would have been obvious to an artisan of ordinary skill in the art to incorporate elliptical coupler of Huber et al to the optical communication system of Nakata. One of ordinary skill in the art would have been motivated to provide such in order to alter path of the light beam to a particular direction.

Regarding claim 7, as discussed above the combination of Nakata and Huber et al disclose optical coupler. Furthermore, in Fig. 4, Huber et al show that the coupler includes dispersive element (for example, element 38) to disperse the reflected light.

Regarding claim 8, as discussed in claim 7, furthermore, Huber et al show that the dispersive element includes a micro-mechanical structure (see col. 5, lines 46-48).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kapany et al (US Patent No. 4,479,697) is cited to show fiber optics communications modules.

Van As et al (US Patent No. 5,764,392) is cited to show access control system for a multi-channel transmission ring.

Eda (US Patent No. 5,289,302) is cited to show access method for optical local area network systems.

Funada et al (US Patent No. 6,172,783) is cited to show optical bus and signal processor.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is 703-306-5619. The examiner can normally be reached on Mon-Fri 8am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703-305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DS
May 3, 2004
David Singh